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DETAILED ACTION

Status of Claims

1. This action is in reply to the amendments filed on 30 July 2009.
2. Claims 1, 2, 4 – 12, 14 – 20 and 23 have been amended by Examiner's amendment below.
3. Claims 3, 13, 21, 22 have been canceled by Examiner's amendment below.
4. Claims 1, 2, 4 – 12, 14 – 20 and 23 are currently pending and allowed.

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EXAMINER'S AMENDMENT

5. An Examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.
6. Authorization for this Examiner's amendment was given in a telephone interview with Mark Smith, Applicant's representative on 24 October 2009 and 28 October 2009 and December 10 2009 and December 17, 2009.

Amendment to the Title

7. Method and System For Optimizing Resource Allocations Based on Cohort Times.

Amendments to the Claims

8. This listing of claims will replace all prior versions and listings of claims in this application.

Listing of Claims:

1. (Currently Amended) A system for performing a study of analyzing resource allocation method ~~of improving resource allocation comprising the steps of:~~ comprising:

system software; and

a central processing unit for implementing said system software, wherein said system software operates to perform the method having the steps of:

identifying at least one ~~criteria~~ criterion for inclusion into a specific population;

identifying sets of information wherein each set of information includes a particular Individual Unit of Analysis entity involved in the study (UOA-ID), a Calendar Clock date/time (CCT), and a Categorical Variable (CATVAR), and a Variable Value (VAR Value);

grouping each UOA-ID from said sets of information into ~~an~~ the appropriate said specific population (Type);

identifying a Start Time wherein each UOA-ID has met said at least one criterion;

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forming at least one prospective or retrospective Cohort time segment for each UOA-ID based on their Start Time;

placing the each UOA-ID into the appropriate said Cohort time segment;

calculating an eligibility score for each UOA-ID for each said Cohort time segment;

calculating an Eligible Adjusted Variable Value for each UOA-ID for each said Cohort time segment; and

generating at least one Output Expression showing at least one trend of a particular population, said at least one trend expressed in at least one of said Cohort time segments and wherein said at least one Output Expression is based on said Eligible Adjusted Variable Value and said UOA-ID for each said Cohort time segment and wherein at least one Output Expression is that can be subdivided by each said CATVAR;

and wherein the system further includes analyzing and evaluating a resource allocation utilizing the generated said at least one Output Expression.

2. (Currently Amended) The ~~method~~ system of Claim 1 wherein said method further comprising the step of transforming the said at least one Output Expression from being expressed in Cohort time segments to being expressed in CCT segments that are subdivided by each said CATVAR.

3. Cancelled.

4. (Currently Amended) The ~~method~~ system of Claim 1 wherein said at least one trend relates to ~~is used for~~ health care applications.

5. (Currently Amended) The ~~method~~ system of Claim 1 wherein said ~~method~~ at least one trend relates to ~~is used for applications selected from~~ the group consisting of warranty applications, actuarial applications, insurance applications, marketing and advertising applications, frequent use program applications, shopping card applications, trademark/trade

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dress/ product design evaluation applications, web page applications, infringement applications, and health care applications.

6. (Currently Amended) The ~~method~~ system of Claim 1 wherein each said Output Expression is generated by ~~the method comprising the step of~~ calculating an Eligible Adjusted Variable Value (EAV) based on a summary metric for each UOA-ID per Type subdivided by each CATVAR.

7. (Currently Amended) The ~~method~~ system of Claim 1 wherein ~~each Output Expression is generated by the~~ said method further comprising the steps of:

determining a Dichotomous Variable (DV) per Type per time segment;

calculating an Eligible Adjusted Variable Value (EAV) summary metric for all UOA-IDs per Type per time segment; and

calculating an EAV Net Value per Type per time segment subdivided by each CATVAR to generate at least one Output Expression.

8. (Currently Amended) The ~~method~~ system of Claim 1 wherein ~~each Output Expression is generated by the~~ said method further comprising the steps of:

determining a Return On Resource Allocation (RORA);

determining an Outcome;

calculating a Number Needed to Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) Net Value per Type per time segment; and

calculating the maximum available Resource Allocation (RA) per UOA-ID per time segment subdivided by each CATVAR to generate said at least one Output Expression.

9. (Currently Amended) The ~~method~~ system of Claim 1 wherein ~~each Output Expression is generated by the~~ said method further comprising the steps of:

determining a Resource Allocation (RA);

determining an Outcome;

calculating a Number Needed To Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) Net Value per Type per

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time segment; and

calculating the Return On Resource Allocation (RORA) per UOA-ID per time segment subdivided by each CATVAR to generate said at least one Output Expression.

10. (Currently Amended) The ~~method~~ system of Claim 1 wherein ~~each Output Expression is generated by the said method further~~ comprising the steps of:

determining a Return On Resource Allocation (RORA);

determining a Resource Allocation (RA);

calculating a Number Needed To Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) Net Value per Type per time segment; and

calculating an Output per UOA-ID per time segment subdivided by each CARVAR to generate said at least one Output Expression.

11. (Currently Amended) A ~~method~~ system for improving resource allocation using a plurality of sets of information, ~~the method comprising the steps of:~~ the system comprising:

system software; and

a central processing unit for implementing said system software, wherein said system software operates to perform the method comprising the steps of:

for each set of information, identifying a particular Individual Unit of Analysis ~~an~~ (UOA-ID), a specific population a Type, at least one Categorical Variable (CATVAR values), a Calendar Clock date/time for each UOA-ID (CCT) and a Variable Value (VAR);

grouping each UOA-ID into an appropriate Grouper;

identifying a Start Time wherein said Start Time is the earliest CCT for each specific UOA-ID per said specific population (Type);

identifying a time segment duration;

forming time segments based on the Start Time wherein each UOA-ID meet

[a] certain eligibility ~~criteria~~ criterion;

adjusting and standardizing each VAR ~~Value~~ to create Eligible Adjusted

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Variable Values (AdjVAR Values);

placing each AdjVAR Values into the appropriate time segment;

calculating an eligibility score for each UOA-ID; and

generating ~~an~~ at least one Output Expression per each said CATVAR values which are compared to each other for analyzing and evaluating a resource allocation showing at least one trend of a particular population, said at least one trend expressed in at least one of said Cohort time segments and wherein said at least one Output Expression is based on said Eligible Adjusted Variable Value and said UOA-ID for each said Cohort time segment;

and wherein the system further includes analyzing and evaluating a resource allocation utilizing the generated said at least one Output Expression.

12. (Currently Amended) The ~~method~~ system of Claim 11 wherein said method further comprising the step of transforming ~~the~~ said at least one Output Expression from being expressed in Cohort time segments to being expressed in CCT segments and wherein said at least one Output Expressions is divided by each said per CATVAR values value which are then compared to each other.

13. Cancelled.

14. (Currently Amended) The ~~method~~ system of Claim 11 ~~that is used for health care applications~~ wherein said at least one trend relates to health care.

15. (Currently Amended) The ~~method~~ system of Claim 11 ~~wherein said method is used for applications,~~ wherein said at least one trend relates to insurance applications, marketing and advertising applications, frequent use programs applications, shopping cards applications, the Internet applications, trademark/trade dress/ product design evaluation applications, patent and trademark infringement applications, and health care applications.

16. (Currently Amended) The ~~method~~ system of Claim 11 wherein said method further ~~wherein each Output Expression is generated by the method~~ comprising the step of calculating

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an Eligible Adjusted Variable Value (EAV) based on a summary metric for each UOA-ID per Type and Output Expression per CATVAR values which are compared to each other.

17. (Currently Amended) The ~~method~~ system of Claim 11 wherein each said at least one Output Expression is generated by ~~the method comprising the steps of:~~

determining a Dichotomous Variable (DV) per Type per time segment;

calculating an Eligible Adjusted Variable Value (EAV) summary metric for all UOA-IDs per Type per time segment; and

calculating an EAV Net Value per Type per time segment to generate said at least one and Output Expression per each said CATVAR values which are compared to each other.

18. (Currently Amended) The ~~method~~ system of Claim 11 wherein each said at least one Output Expression is generated by ~~the said~~ method further comprising the steps of:

determining a Return On Resource Allocation (RORA);

determining an Outcome;

calculating a Number Needed to Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) Net Value per Type per time segment; and

calculating the maximum available Resource Allocation (RA) per UOA-ID per time segment and to generate said at least one Output Expression per CATVAR values which are compared to each other.

19. (Currently Amended) The ~~method~~ system of Claim 11 wherein ~~an~~ said at least one Output Expression is generated by ~~the said~~ method further comprising the steps of:

determining a Resource Allocation (RA);

determining an Outcome;

calculating a Number Needed To Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) Net Value per Type per time segment; and

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calculating ~~the~~ a Return On Resource Allocation (RORA) per UOA-ID per time segment and generate said at least one Output Expressions per CATVAR values which are compared to each other.

20. (Currently Amended) The ~~method~~ system of Claim 11 wherein each said at least one an Output Expression is ~~are~~ generated by said ~~the~~ method further comprising the steps of:

determining a Return On Resource Allocation (RORA);

determining a Resource Allocation (RA)[:];

calculating a Number Needed To Target (NNT);

calculating an Eligible Adjusted Variable Value (EAV) ~~New~~ Net Value

per Type per time segment; and

calculating an Output per UOA-ID per time segment ~~and~~ to generate said at least one Output Expressions per CATVAR values which are compared to each other.

21. Cancelled

22. Cancelled

23. (Currently Amended) A system for performing a study of analyzing resource allocation ~~optimizing resource allocation~~ whereby Output Expressions are produced comprising a representation, said representation is selected from the group consisting of a showing Eligible Adjusted Variable Value (EAV) trends ~~of a particular~~ for a specific Population having a eligibility criteria and formed from individual units each meeting at least one defined criteria, said trends are expressed in Cohort time segments based on a Start Time wherein each individual unit meets all of the eligibility criteria to be included into the Population; a showing Number Needed to Target (NNT) trends ~~of a particular said~~ specific Population; said trends are expressed in Cohort time segments per Categorical Variable (CATVAR) values which are compared to each other.

ALLOWANCE

9. The following is an Allowance in response to the Amendment submitted on 30 July 2009 and telephonic interviews with Mark Smith, Esq., Applicant's representative held on 19 December 2009. Claims 1, 2, 4 – 12, 14 – 20 and 23 have been amended by Examiner's amendment above. Claims 1, 2, 4 – 12, 14 – 20 and 23 are currently pending and allowed below.

REASONS FOR ALLOWANCE

10. The following is an examiner's statement of reasons for allowance.
11. The present invention is directed to a method and system for transforming economic and eligibility information produced over specified calendar/clock time (CCT) intervals per a unique unit of analysis (e.g. UOA-ID) that meets the criteria for inclusion into a specific Population (Type). This information is organized by Cohort Time and summarized across all UOA-Ids that are part of the same Population. An Eligible Adjusted Variable Value (EAV) can then be calculated for each time segment and summarized across all the UOA-IDs to enable one to estimate resources that can be "allocated per UOA-ID per Cohort time segment to reach a defined outcome based on a defined return on resource allocation estimate and thus provides a unique way to evaluate resource allocation decisions.
12. The invention encompasses the identification of criteria, Units of Analysis (UOA-ID) and associated Calendar Clock Times (CCT) and further associating a Start Time indicating when a UOA-ID has met a criterion. Using this framework, the invention provides a means for analyzing resource allocation trends based on Cohort Time Segments. The closest prior art McCartney (US PgPub 20030065534 A1) and Wong (US 5976082 A) fail to teach or suggest either singularly or in combination the specific and essential step of identifying a Start Time and forming at least one Cohort time segment based on that Start Time and then basing the entire data base structure on the unique use of calendar time to generate data based on cohort time with retrospective and prospective time segments pivoting around that start time as recited in independent Claims 1, 16, 32, 34 and 36. Wong also does not show forming at least one Cohort time segment based on the

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Start Time as defined in the subject application. While Wong provides that the Start Time is the first available date of enrollment and a time window is defined to provide a timeframe from which to judge whether events should be considered in subsequent processing, such a time window is not equivalent to a Cohort time segment.

13. The process taught in Wong is profoundly different than the process taught in the subject invention. As shown in Figs. 6A and 6B, column 13 lines 61 -67 and column 14, lines 1 - 34 of Wong, the process of Wong teaches using an events window to make a prediction window based on known data and using this to make a model that can be used to make predictions on new sets of data. This does not provide a teaching of a process of resource allocation. Further, point "B" operates as an Index Time ("Start Time"). As stated:

"The definition of the present instant B is important. In the subject invention, two basic definitions of B were devised in order to maximize the accuracy of the prediction model. Although, as would be understood by those skilled in the art, alternative definitions of B may also be used"

14. Thus, in Wong the "Index Time" or Start Time is not set or specifically defined by the criteria, but is arbitrary assigned by the operator for making a prediction model. Points "A" and "C" (a point selected on how far out in time the prediction is to be made and calendar point "B" is arbitrary for use later in making predictions and uses statistical regression and progression models derived from data between point "A" and point "B" to predict what will happen between points "B" and "C" to create a prediction model. Point "B" of Wong is not set or defined as the time that an UOA-ID meets a set of predetermined conditions to be eligible for a defined population and therefore Wong does not apply Cohort time segments where each individual (UOA) can have a unique calendar time for point "B", and therefore point "A" to point "B" (retrospective time segment) and point "B" to point "C" (prospective time segments). Thus, Wong teaches selecting a population with a congestive heart failure (CHF) diagnoses and a beginning and an end calendar time period. Then Wong teaches the selection of a point between the beginning and the end that is arbitrary (e.g. six months before the end date) and has nothing to do, for example, with the diagnoses. Wong's mention of the "date of first CHF diagnosis" is only part of a long list of the

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elements of a source data set; it can be used in his prediction model, but is not a central operating principle of his model to determine Point "B". Then within the time from the beginning to the arbitrary point between the beginning and the end, he seeks information important for statistical prediction of events between the beginning point and arbitrary mid-point; and the arbitrary mid-point and the end point where the calendar time segments are the same for each person.

15. The present invention teaches a central, non-arbitrary, starting point (similar to point B in Wong) based on criteria (or criterion) and using that as a central point where both prospective and retrospective time segments can be generated for each UOA in what is called "cohort time". Indeed, in the current invention, the point comparable for A and C in Wong is, in fact, arbitrary. Thus, what is arbitrary (point B) in Wong is non-arbitrary in the instant invention, and what is non-arbitrary in Wong (points A and C) is arbitrary in the instant invention. As described in the instant application, point "B" would be defined as the Start Time which is strictly defined as a date that the individual UOA-ID meets all of the eligibility criteria to be included into a population. Accordingly, the model of the subject application using Cohort Time and real data not requiring the use of statistical regression and progression modeling, instead it can clearly use empirical data to examine the population trend both before and after the index calendar time start date of each person, now transformed into a common "cohort time" date for all persons in the population.
16. McCartney discloses a method for determining resource consumption for a subject health care provider using resource consumption information from at least one other health care provider. McCartney however does not include the specific step of identifying a Start Time and forming at least one Cohort time segment based on that Start Time and then basing the entire data base structure on the unique use of calendar time to generate data based on cohort time with retrospective and prospective time segments pivoting around that Start Time. Thus, the process of the instant invention is nowhere taught or disclosed in McCartney.
17. Other analogous art also fails to provide the teachings of the instant invention. Gordin, et al. (*Early Manifestions ...*) pertains to the use of cohort studies to determine drug efficacy. Gordin

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also uses factors such as the time of onset of a disease condition and its relation to detection of a causative agent of the disease condition, but does not provide for the definition of cohorts based on time intervals or methods for trend analysis for purposes of resource allocation. Seare, et al (US 6223164 B1) teaches a comparison of a medical provider's utilization profile with a normative profile and uses the notion of time frames and durations, but also does not teach use of cohort times associated with units of analysis and trend analysis so cannot be used in the same manner as the instant invention for resource allocation decisions.

18. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

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Conclusion

Any inquiry of a general nature or relating to the status of this application or concerning this communication or earlier communications from the Examiner should be directed to **Mark A. Fleischer** whose telephone number is **571.270.3925**. The Examiner can normally be reached on Monday-Friday, 9:30am-5:00pm. If attempts to reach the examiner by telephone are unsuccessful, the Examiner's supervisor, **Bradley Bayat** whose telephone number is **571.272.6704** may be contacted.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://portal.uspto.gov/external/portal/pair> <<http://pair-direct.uspto.gov>>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at **866.217.9197** (toll-free).

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20 December 2009

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